

Nalco Docket No. 7773
Customer No. 49459

LISTING OF CLAIMS

Claim 1 (previously presented): A method of enhancing the press section dewatering of a paper sheet on a paper machine comprising adding to the paper sheet about 0.05 lb/ton to about 15 lb/ton, based on dry fiber, of one or more aldehyde functionalized polymers comprising amino or amido groups wherein greater than 20 mole percent of the amino or amido groups are functionalized by reacting with one or more aldehydes and wherein the aldehyde functionalized polymers have a weight average molecular weight of at least about 300,000 g/mole.

Claim 2 (original): The method of claim 1 wherein the aldehyde functionalized polymers are selected from the group consisting of aldehyde functionalized polyamines and aldehyde functionalized polyamides.

Claim 3 (original): The method of claim 1 wherein the aldehydes are selected from formaldehyde, paraformaldehyde, glyoxal and glutaraldehyde.

Claim 4 (original): The method of claim 1 wherein the aldehyde functionalized polymer is an aldehyde functionalized polyamide.

Claim 5 (original): The method of claim 4 wherein the aldehyde functionalized polyamide is an aldehyde-functionalized polymer comprising 100 mole percent of one or more nonionic monomers.

Claim 6 (original): The method of claim 4 wherein the aldehyde functionalized polyamide is an aldehyde functionalized copolymer comprising about 5 to about 99 mole percent of one or more acrylamide monomers and about 95 mole percent to about 1 mole percent of one or more cationic, anionic or zwitterionic monomers, or a mixture thereof.

Nalco Docket No. 7773
Customer No. 49459

Claim 7 (previously presented): The method of claim 6 wherein the aldehyde functionalized polyamide is an aldehyde-functionalized copolymer comprising about 1 to about 50 mole percent of one or more anionic monomers and about 99 to about 50 mole percent of one or more nonionic monomers.

Claim 8 (previously presented): The method of claim 6 wherein the aldehyde functionalized polyamide is an aldehyde-functionalized copolymer comprising about 1 to about 30 mole percent of one or more anionic monomers and about 99 to about 70 mole percent of one or more nonionic monomers.

Claim 9 (original): The method of claim 6 wherein the aldehyde functionalized copolymer is an aldehyde-functionalized amphoteric polymer comprising up to about 40 mole percent of one or more cationic monomers and up to about 20 mole percent of one or more anionic monomers.

Claim 10 (original): The method of claim 6 wherein the aldehyde functionalized copolymer is an aldehyde-functionalized amphoteric polymer comprising about 5 to about 10 mole percent of one or more cationic monomers and about 0.5 to about 4 mole percent of one or more anionic monomers.

Claim 11 (original): The method of claim 6 wherein the aldehyde functionalized copolymer is an aldehyde-functionalized zwitterionic polymer comprising about 1 to about 95 mole percent of one or more zwitterionic monomers.

Claim 12 (original): The method of claim 6 wherein the aldehyde functionalized copolymer is an aldehyde-functionalized zwitterionic polymer comprising about 1 to about 50 mole percent of one or more zwitterionic monomers.

Claim 13 (original): The method of claim 6 wherein the aldehyde functionalized polyamide is an aldehyde functionalized copolymer comprising about 50 to about 99 mole percent of one or more acrylamide monomers and about 50 to about 1 mole percent of one or more cationic monomers.

Nalco Docket No. 7773
Customer No. 49459

Claim 14 (cancelled)

Claim 15 (original): The method of claim 1 wherein the aldehyde functionalized polymer is a copolymer comprising about 50 to about 99 mole percent of one or more acrylamide monomers and about 50 to about 1 mole percent of one or more cationic monomers wherein the copolymer is functionalized with glyoxal.

Claim 16 (original): The method of claim 15 wherein the cationic monomer is a diallyl-*N,N*-disubstituted ammonium halide monomer.

Claim 17 (previously presented): The method of claim 16 wherein greater than 20 to about 50 mole percent of the amide groups of the copolymer have reacted with glyoxal.

Claim 18 (original): The method of claim 16 wherein the nonionic monomer is acrylamide and the diallyl-*N,N*-disubstituted ammonium halide monomer is diallyldimethylammonium chloride.

Claim 19 (cancelled)

Claim 20 (previously presented): The method of claim 1 wherein the aldehyde-functionalized polymer is a copolymer comprising about 70 to about 99 mole percent of acrylamide and about 1 to about 30 mole percent of diallyldimethylammonium chloride.

Claim 21 (previously presented): The method of claim 20 wherein greater than 20 to about 26 mole percent of the amide groups of the copolymer have reacted with glyoxal.

Claim 22 (original): The method of claim 21 wherein about 0.5 lb/ton to about 3 lb/ton, based on dry fiber, of glyoxylated copolymer is added to the paper sheet.

Claim 23 (original): The method of claim 1 wherein the aldehyde functionalized polymer is sprayed onto the paper sheet prior to press dewatering.